

2. (Amended) Method according to claim 1, wherein said one or more sets of dedicated electrodes is/are placed subcutaneously, epimesially or intramuscularly.

3. (Amended) Method according to claim 1, wherein said one or more sets of dedicated electrodes are implanted in a muscle or muscles.

4. (Amended) Method according to claim 1, wherein the electromyographic (EMG) signals from said one or more sets of dedicated electrodes are transmitted to signal processing means by wireless transmission.

5. (Amended) Method according to claim 4, wherein the electromyographic (EMG) signals from said one or more sets of dedicated electrodes are processed by signal processing means, and wherein control signals for the prostheses are produced, said signal processing means utilizing a pattern recognition method.

6. (Amended) Method according to claim 5, wherein the control signals of the prostheses are generated by utilizing an artificial neural network (ANN).

7. (Amended) Method according to claim 1, wherein the electromyographic (EMG) signals are received by four or more sets of dedicated electrodes placed in relation to at least four muscles or distinct functional muscle compartments.

8. (Amended) Method according to claim 7, wherein said prostheses comprise an artificial arm and/or hand and wherein said one or more sets of electrodes are placed in relation to at least the following muscles: Flexor Digitorum, Extensor Digitorum, Flexor Pollicis Longus and Extensor Pollicis Longus.

9. (Amended) Method according to claim 7, wherein said prostheses comprise an artificial arm and/or hand and wherein said one or more electrodes are placed in relation to at least the following muscles: Flexor Digitorum, Extensor Digitorum, Flexor Pollicis

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Longus, Extensor Pollicis Longus, Pronator Teres, Supinator, Flexor Carpi Radialis and Extensor Carpi Radialis.

10. (Amended) Method according to claim 1, wherein two or more sets of dedicated electrodes are placed in relation to at least one muscle, said two or more dedicated electrodes being placed in relation to different parts of said at least one muscle.

11. (Amended) Method according to claim 1, wherein electroneurographic (ENG) signals are received by one or more separate sets of ENG-electrodes and said ENG-signals are used as complimentary signals for generating control signals.

12. (Amended) A system for controlling a prosthesis, wherein electromyographic (EMG) signals are used to generate control signals for one or more artificial limbs the system comprising one or more sets of electrodes, each dedicated to a source of electromyographic (EMG) signals for receipt of the electromyographic (EMG) signals.

13. (Amended) System according to claim 12, wherein said one or more sets of dedicated electrodes is/are configured for subcutaneous, epimesial or intramuscular placing.

14. (Amended) System according to claim 12, wherein said one or more sets of dedicated electrodes is/are configured for an implantation in a muscle or muscles.

15. (Amended) System according to claim 12, further comprising means for transmitting the electromyographic (EMG) signals from said one or more sets of dedicated electrodes to signal processing means by wireless transmission.

16. (Amended) System according to claim 12, further comprising signal processing means for producing control signals for the artificial limb(s), said signal processing means utilizing a pattern recognition method.

17. (Amended) System according to claim 12, further comprising an artificial neural network (ANN) for generating control signals for the artificial limb(s).

18. (Amended) System according to claim 12, wherein the system comprises four or more sets of dedicated electrodes placed in relation to at least four muscles or functional distinct muscle compartments for receipt of electromyographic (EMG) signals.

19. (Amended) System according to claim 18, wherein said prostheses comprise an artificial arm and/or hand and wherein one or more sets of electrodes is/are placed in relation to at least the following muscles: Flexor Digitorum, Extensor Digitorum, Flexor Pollicis Longus and Extensor Pollicis Longus.

20. (Amended) System according to claim 18, wherein said prostheses comprise an artificial arm and/or hand and wherein one or more sets of electrodes is/are placed in relation to at least the following muscles: Flexor Digitorum, Extensor Digitorum, Flexor Pollicis Longus, Extensor Pollicis Longus, Pronator Teres, Supinator, Flexor Carpi Radialis and Extensor Carpi Radialis.

21. (Amended) System according to claim 12, wherein the system comprises two or more sets of dedicated electrodes placed in relation to at least one muscle, and said two or more sets of dedicated electrodes is/are placed in relation to different parts of said at least one muscle.

22. (Amended) System according to claim 12, further comprising one or more sets of electroneurographic (ENG) electrodes for receiving electroneurographic (ENG) signals wherein said ENG-signals are used as complimentary signals for generating control signals.